DOCUMENT RESUME

ED 308 780 HE 022 749

AUTHOR Friedel, Janice Nahra
TITLE The EICCD Program Evaluation Process: A Primary Data Source for Strategic Planning and Decision Making. AIR 1989 Annual Forum Paper.
PUB DATE May 89
NOTE 24p.; Paper presented at the Annual Forum of the Association for Institutional Research (29th, Baltimore, MD, April 30-May 3, 1989).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Curriculum; College Instruction; *College Planning; *College Programs; Community Colleges; Enrollment; *Evaluation Methods; Graduation; Higher Education; Institutional Research; Program Costs; *Program Evaluation; *Self Evaluation (Groups)
IDENTIFIERS *AIR Forum; Eastern Iowa Community College District; External Evaluation; *Strategic Planning

ABSTRACT

The primary purpose of the Eastern Iowa Community College District (EICCD) Program Evaluation Process is to ensure curricular relevance, instructional quality and the effective and efficient use of resources. Developed and pilot-tested on 38 vocational-technical programs, the model is being utilized by more than 120 technical and community colleges in the United States and Canada. The process consists of two phases, an annual review of the program in terms of 10 data elements and an in-depth program review conducted once every 3-5 years. The 10 data elements are unduplicated enrollment/headcount; contact hours generated by the program; full-time equivalent (FTE) enrollment generated by the program; program graduation/completion rates; program leavers and withdrawal rates; program majors' intent for enrolling in the program; program costs; average class size; success of program leavers and graduates; and meeting highlights. Phase II consists of faculty self-study; an internal review team visit and report, surveys conducted of 6 target groups, and decision-making. Contains 38 references. (Author/KM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED308780

The EICCD Program Evaluation Process: A Primary Data Source for Strategic Planning and Decision Making

Dr. Janice Nahra Friedel
Associate Vice Chancellor for Academic Affairs and Planning
Eastern Iowa Community College District
Scott Community College
500 Belmont Road
Bettendorf, Iowa 52722
(319) 359-7531

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

AIR

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

HE 022 749

BEST COPY AVAILABLE

for Management Research, Policy Analysis, and Planning

This paper was presented at the Twenty-Ninth Annual Forum of the Association for Institutional Research held at the Omni Inner Harbor Hotel and the Lord Baltimore Hotel, Baltimore, Maryland, April 30 - May 3, 1989. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Teresa Karolewski
Chair and Editor
Forum Publications Editorial
Advisory Committee

Abstract

The primary purpose of the EICCD Program Evaluation Process is to ensure the effective and efficient use of resources, and instructional quality and curricular relevance. Developed and pilot-tested on thirty-eight vocational-technical programs, the model is being utilized by more than 120 technical and community colleges in the U.S. and Canada. The process consists of two phases: 1) an annual review of the program on ten data elements, and 2) an in-depth program review conducted once every 3-5 years. Phase II consists of: faculty self-study; an internal review team visit and report; surveys conducted of six target groups; and, decision making.

The EICCD Program Evaluation Process:

A Primary Data Source for

Strategic Planning and Decision Making

No one can deny the impact of the changing and emerging technologies, and the shifting of the U.S. economy from a heavy manufacturing foundation to the technicial and service industries on our nation's community and technical colleges. An influx of non-traditional students across a wide spectrum of entry-level skills and knowledge, and severe fiscal restraints, have further stretched the ability of community and technical colleges to provide quality educational opportunities for all students. Institutions must be able to respond programmatically to these challenges; however, what information do decision makers need in order to plan strategically and to act tactically? The Eastern Iowa Community College District (EICCD) has developed and implemented a program evaluation process which provides timely and accurate data to both faculty and administrators regarding the health and viability of its programs, and program recommendations are formulated and validated.

The pilot test of the EICCD Program Evaluation Process on 36 vocational-technical programs was completed over a two and a half year period. Its primary purpose is to ensure the effective and efficient use of resources, and instructional quality and curricular relevance. Developed principally for vocational and technical programs, the information garnered from the evaluations is used to assist in program and cost accountability efforts, and to provide direction to program/curriculum development, modification or termination. Additionally, the implementation of the EICCD Program Evaluation

Process has provided opportunities to compare business and industrial standards with occupational program standards; to involve and utilize the expertise of representatives from related businesses and industries in the program and the college; to inform former students, employers, and the business community of the institution's commitment to self-improvement and excellence; and, to identify needed changes and modifications in its physical facilities and instructional equipment.

The purpose of this article is to briefly describe the development of the process, its major components, and its use by the EICCD and other technical and community colleges.

Definition of Program Evaluation

There are many different definitions for evaluation. Some definitions regard evaluation as roughly synonymous with educational measurement (Thorndike & Hagen, 1969; Ebel, 1967). Other definitions view evaluation as a process of identifying and collecting information to assist decision-makers in choosing among available decision alternatives (Stake, 1967; Provus, 1969; Stufflebeam, et al, 1971). Very simply, evaluation is the determination of the worth of a thing. "It includes obtaining information for use in judging the worth of a program, product, procedure, or objective, or the potential utility of alternative approaches designed to attain specified objectives." (Worthen, page 19).

Wendle and Neigher (1978) distinguished three models for the use of evaluation information: accountability, advocacy, and program improvement. For the EICCD, the major goal of program evaluation is to improve the quality of education; secondarily, it is accountability.

The Purpose of Program Evaluation

The major goal of program evaluation for the EICCD is program improvement. It is a means of ensuring program quality and relevance, and the effective and efficient use of resources. Program evaluation is a cooperative process which utilizes the knowledge and expertise of instructors, administrators, current and former students, employers, and advisory committee members. Program evaluation is worthwhile in itself for it initiates a process of self-examination among administrators and faculty, and assists in the formulation and clarification of program goals and objectives.

The EICCD Program Evaluation Process provides for the flow of information and recommendations from the faculty, through the administrative ranks, all the way to the Chancellor of the District. Not only is the information used by decision-makers regarding the maintenance, modification or termination of an existing program, but it also provides valuable insights into areas of new program development.

The Eastern Iowa Community College District

The EICCD is a multi-college District serving eight counties in east-central Iowa, and is comprised of three colleges: Scott Community College, Clinton Community College, and Muscatine Community College. Each of the three colleges is a comprehensive community college with Arts and Science college transfer programs, vocational-technical programs, and community/continuing education offerings. The credit offerings include 36 vocational-technical programs, 11 career option/college parallel programs and more than 70 Arts and Sciences concentrations.

The District Office of Academic Affairs and Planning coordinates the program development, revision, and evaluation efforts of all three colleges, and includes the functions of institutional research.

Development of the EICCD Program Evaluation Process

The successful development and implementation of a comprehensive program evaluation process for the vocational-technical offerings of the EICCD was contingent upon the involvement of and ownership by faculty in the process, and administrative support and commitment.

In 1985, the EICCD established a Program Improvement Steering Committee with the purpose of designing a program evaluation process which would provide program specific information to all levels of institutional decision-makers. This Committee was composed of faculty, college program administrators, Student Development personnel, and District Academic Affairs administrators. The purpose of the Committee was to develop a practical program evaluation process which would include the collection and analysis of pertinent program data; provide recommendations regarding a program's curriculum, facilities and equipment, staff development activities for faculty, and college/student services; and, require minimal time on the part of faculty.

The District Office of Academic Affairs and Planning conducted a review of the literature and related research regarding program evaluation processes, looking specifically at those utilized for vocational and technical programs, and by community and technical colleges. Over 40 different models were examined in detail, commonalities and strengths noted, summary reports written, and a review conducted by the Program Improvement Steering Committee. Visitations to three colleges with operational program evaluation processes were conducted by various members of the Committee.

Obstacles to Overcome in the Development of the Process

The EICCD needed to develop a process which would provide faculty the opportunity to respond to data regarding their program, to identify the

strengths and weaknesses of their program, and to make recommendations. In the EICCD, the teachers' Master Contract stipulates that program evaluation is a responsibility of a full-time teacher; teachers are not paid extra for completing tasks related to the evaluation of their program. Therefore, the EICCD needed to develop a process which would not require an inordinate amount of faculty time.

Another obstacle facing the EICCD was a faculty mistrust of statistical data regarding their program's enrollment and cost. Objectivity and consistency in reporting was a primary concern. The Committee recommended that these responsibilities be assigned to the District institutional research staff to ensure objectivity, accuracy, and consistency in reporting data across all programs.

In order to limit the amount of time required of faculty in the implementation of the process, all surveys conducted as a part of the process would be mailed, receipted, tabulated, analyzed, and a summary report written by staff in the District Office of Academic Affairs and Planning. This would also guarantee accuracy and objectivity in the collection and reporting of survey data.

The EICCD Program Evaluation Process

The EICCD Program Evaluation Process has been pilot-tested and evaluated on the thirty-six vocational-technical programs of the District. It has proven to be comprehensive in nature, low in cost, and require minimal additional time on the part of faculty. Budgetary decisions regarding facility changes, equipment acquisition, and staff development of faculty are based upon the results of these evaluations.

The EICCD Program Evaluation Process consists of two phases: Phase I, an Annual Review of the program; and, Phase II, an in-depth evaluation conducted on a three-year cycle.

Phase I: Annual Review

The purpose of the Annual Review is to provide a "snapshot view" of the health of a program. This two-page report on each program is a quick means of determining the well-being or health of a program. The ten data elements of the Annual Review are compared year-to-year over a three-year period. These data elements are:

1. Unduplicated enrollment/headcount
2. Contact hours generated by the program
3. FTEE generated by the program
4. Program graduation/completion rates
5. Program leavers and withdrawal rates
6. Program majors' intent for enrolling in the program
7. Program costs (per student, contact hour, and FTEE)
8. Average class size
9. Success of program leavers and graduates (includes job placement and employment status, as well as college transfer information)
10. Advisory Committee meetings' highlights and Department meetings' highlights

The collection and reporting of the annual review data is completed by the District Office of Academic Affairs and Planning. Printed reports are provided to college administrators annually, and to faculty when they are conducting the Self-Study of their program.

Phase II: In-Step Program Review

All vocational-technical programs are evaluated on a three-year cycle. The sequence of programs in the three-year cycle is determined by the District Instructional Council, but a program's placement in the cycle may be accelerated if the Annual Review raises questions or concerns regarding its continued viability.

The five major components of Phase II are:

1. Surveys conducted of six target groups.
2. A local labor market assessment in the specific program/occupational area.
3. Faculty Self-Study of the program.
4. The Internal Review Team visit and report.
5. Faculty Response.

1. Surveys. Surveys are conducted of the six groups prior to the Faculty Self-Study: 1) current students enrolled in the program; 2) graduates of the program from the past three years; 3) college administrators; 4) part-time faculty in the program; 5) program Advisory Committee members; and, 6) employers of the program's graduates.

The target groups are asked to provide information regarding the quality of instruction, program and course objectives, instructional methodologies and materials, equipment, facilities, advising, job placement and college transfer services, individualized instruction, learning resources, other college services, and future occupational outlook.

These surveys are standardized for all vocational-technical programs of the EICCD, and are designed for tabulation and analysis using the SPSS.

The distribution and receipting of the surveys; data entry, analysis, and

interpretation; and the writing and printing of the results are completed by the EICCD Office of Academic Affairs and Planning. Reports are provided to the faculty and Internal Review Team members for interpretation, the identification of program strengths and weaknesses, and the formulation of recommendations. Thus, faculty are put into a position of interpreting and recommending changes in their program, as opposed to data collection and analysis.

2. Local Labor Market Assessment. A local labor market assessment is conducted in each program's occupational field. Combined with regional and national data, the assessment provides information regarding employer need for the program's graduates as well as future needs in the occupational field. The local labor market assessment is unique for each program/occupational field.

The development of each program's labor market assessment, and the data collection and analysis is coordinated by the District Office of Academic Affairs and Planning. An Ad Hoc Assessment Task Force is formed for each occupational/program area, composed of faculty, employers, and an Assessment Specialist. Since the information from the assessments is used for programmatic as well as budgetary decision making, it is important that faculty are involved in the identification of questions specific to the occupational field and the determination of businesses and industries who will receive the survey.

The assessment consists of two surveys. The initial survey is sent to all known or prospective employers of technicians or specialists in the occupational field. This survey obtains information regarding:

1. The demographics of the respondent: location, type of business, size, total number of employees, and the number of employees in specific categories.

2. Entry-level employees: minimum education level required and preferred, minimum work experience required and preferred, type of compensation, and expected annual compensation.
3. Current employees: type of equipment used, continuing education needs, and preferred methods for meeting continuing education needs.
4. Employment needs and projections: immediate number of job openings, and projected job openings of the next three years.
5. Local and national trends in the occupational field.

The second survey is designed to determine the competencies required of entry-level employees in the occupational field. Data are collected from employers who indicated on the first survey that they intend to hire employees in the specific occupational field. The Ad Hoc Assessment Task Force reviews the results of the initial survey giving special attention to the characteristics of the respondents, the requirements for employees with generalized and specialized skills and knowledge, and the recent and projected changes in the occupational field. The Ad Hoc Assessment Task Force also examines related research, occupational task lists such as DACUM charts, and competency-based curricular materials in the program. The second survey consists of the list of entry-level employee competencies compiled by the Task Force; the respondents are asked to rate each competency on three variables:

1. Importance of the competency.
2. Frequency of use on-the-job.
3. Immediacy of use.

This survey also provides space for the respondents to write in additional competencies they require new hires to have.

All labor market assessment surveys are designed for tabulation and

analysis using the SPSS. Summary Reports are provided to the faculty and Internal Review Team members for interpretation and the formulation of recommendations.

3. Faculty Self-Study. The faculty in each program collectively complete the 22 questions of the Self-Study Report. Generally, the Department Chairperson coordinates the efforts of the faculty in completing the Self-Study. Their responses highlight:

- the history, philosophy, goals, and objectives of the program;
- how the program reflects "the state of the art";
- teaching methods utilized;
- type of equipment and facilities currently used;
- advising of students and job placement of graduates:
- qualifications, certification and staff development activities of full-time and part-time faculty;
- the strengths and weaknesses of the program;
- factors impacting the program;
- additional equipment and/or facilities needed to maintain and/or enhance the program;
- and, recommended curriculum/program changes.

Before completing the Self-Study, the faculty review the results of the local labor market assessment and other national and regional data collected regarding the occupational field, as well as the results of the surveys conducted as a part of the program evaluation process. Use of these materials assist the faculty in the identification of their program strengths and weaknesses, and the formulation of their recommendations. The Course Development Models (course syllabi) for all courses specific to the program

major are inserted into the Faculty Self-Study. The Report is then forwarded to and reviewed by an Internal Review Team.

4. The Internal Review Team. An Internal Review Team is designated for each specific program. Minimally, the team is composed of four individuals internal to the District but external to the faculty of the program; thus, in many ways, it serves the purpose of external evaluation, but at no additional cost to the District. An external consultant may be involved in the evaluation if the team deems it necessary.

The Internal Review Team generally consists of one District administrator, one college administrator, and at least two faculty members (one Arts and Science and one Vocational-Technical faculty member). At least two of the teams members are very knowledgeable in the program/occupational field. The other two have expertise in curriculum development or other knowledge and skills deemed appropriate by the District Instructional Council. Team members are selected by the District Instructional Council.

The Internal Review Team studies all documents related to the evaluation of the program. After the study, they conduct an on-site visit to the program in which they: discuss the program and the content of the Faculty Self-Study with the faculty members and administrators; tour the laboratories; examine the course development models and other instructional materials, equipment, and supplies; interview current students; and meet with Advisory Committee members regarding their role and e perceptions of the program.

The Team then completes a written report of their findings and recommendations. This report consists of the answers to 36 questions paralleling the questions to which the faculty have responded.

The Internal Review Team Report discusses the following aspects of the

Program: the consistency of the program goals and objectives with validated entry-level occupational competencies; the quality of the curriculum and the course development models; the degree to which prerequisite knowledge and skills are defined for students; accommodation for part-time, non-traditional, and special needs students; success of program graduates and leavers; the local and regional employment prospects in the occupational/program field; the relevancy, quality, and availability of instructional equipment and materials; linkages with businesses and industries; faculty staff development activities provided to maintain their knowledge and skills in the occupational field; the role of the Advisory Committee; and the adequacy of the program's budget and the cost effectiveness of the program.

The Internal Review Team Report also includes a 15-item rating scale for the physical facilities, and if appropriate, can be modified for specific programs.

The Team Report concludes with the identification of the program's major strengths, the major factors influencing the continued success of the program, and recommendations for improvement. Their completed report is sent to the District Office of Academic Affairs and Planning.

5. Faculty Response. Upon receipt of the Internal Review Team Report, the District Office of Academic Affairs and Planning forwards a copy to the chairperson of the Faculty Self-Study Committee, as well as to the college Dean of Instruction. If the faculty disagree with statements made in the Internal Review Team Report, they have the opportunity to respond in writing within a specified period of time. This response is sent to the District Office of Academic Affairs and Planning for consideration in the decision-making process.

The Decision Making Process

Copies of the Faculty Self-Study Report, the Internal Review Team Report, and the Faculty Response (if any) are disseminated by the District Office of Academic Affairs and Planning to the college Presidents and the Deans of Instruction. Their reactions to the recommendations formulated by the faculty and the Internal Review Team are forwarded to the District Office of Academic Affairs and Planning.

All of the documents compiled as a part of the program evaluation process are made available to the administration of the colleges and the District. Because of the volume of information that is generated, staff from the District Office of Academic Affairs and Planning review all reports, and compile a summary of each program's evaluation. The summary reports highlight the strengths and weaknesses of the program as cited by each group, as well as the recommendations. The summary reports are sent to all members of the Instructional and Administrative Councils, as well as to the Chancellor of the District.

A joint meeting of the District's Administrative and Instructional Councils is chaired by the Chancellor. All individuals present have copies of the summary reports, as well as access to the complete reports. These meetings are usually one day in length. The evaluations of all programs are discussed, and decisions are made regarding new program direction, the acquisition of new equipment, facilities requirements, and staff development activities for faculty.

Use of the Evaluation Results

The information gained through the evaluations have provided direction to the development of the EICCD's vocational-technical programs to a competency-base. All programs have been modified based on the information obtained through the evaluations; a few have been terminated. Eight new programs have been developed: Sales and Marketing, Graphic and Printing Communications, Hazardous Materials Technology, Chemical Laboratory Technician, Travel Specialist, Management and Supervision, Microcomputer Software Applications, and Automated Manufacturing.

The results of the evaluations are used in determining the relationship of the program's student outcomes to employers' needs; the subsequent program revisions are vital to maintaining quality and relevant programs. These revisions include:

- The incorporation of computer-aided design into the Drafting program.
- The addition of computer-aided design instruction, as well as computerized inventory control in the Interior Design program.
- The incorporation of information regarding computerized controls and systems in residential and commercial heating and air conditioning in the Heating, Ventilation and Air Conditioning program.
- The revision of the Automotive Technology program into a ladder structure which awards a certificate after one semester, a diploma after one year, and an A.A.S. after completion of the two-year program. The evaluation also indicated that the Automotive Technology program should become ASE certified; through the subsequent curriculum development, this program is now ASE certified in all eight areas.

- The addition of instruction in satellite communications and microcomputer repair in the Electronics program.
- The development of computer-assisted instructional units and the addition of units related to geriatric care in the Nursing curriculum.

The EICCD has designated that one-third of its annual equipment acquisition budget be tied to the equipment approved for purchase through the program evaluation process. Funds for faculty development activities are also allocated according to the needs cited in the evaluations.

The evaluations may also highlight deficiencies in other areas of the college, such as job placement services, advising and counseling, financial aid, child care, etc.

The administration of the EICCD has learned that the evaluation process brings people together. Faculty, administrators, employers, and students are all involved in the process. It fosters cohesion across the institution by involving faculty external to the program being evaluated. Decision making has become a participatory process; data regarding programs are open to scrutiny and review at all levels of the college community.

The EICCD Program Evaluation Process has fostered both institutional unity within the college and with the broader community. The process has communicated to the community the District's commitment to excellence, and its responsiveness to local needs. Secondary benefits that the EICCD has experienced include the donation of equipment and supplies to various programs from local businesses and industries; and, a 22% increase in the number of job listings from employers for program graduates as a result of contact made through this process.

The EICCD Program Evaluation Process can be easily modified and adapted to

the needs of other educational institutions. Over 120 technical and community colleges in the United States and Canada have utilized the EICCD Program Evaluation Process in their efforts to obtain relevant information which fosters quality decision making and strategic planning.

References

Alkin, M. C., Daillak, R., & White, P. (1979). Using Evaluations: Does Evaluation Make A Difference? Beverly Hills, CA: Sage Publications.

Attkisson, C. C., & Broskowski, A. (1978). Evaluation and the Emerging Human Service Concept. In C. C. Attkisson, W. A. Hargreaves, M. J. Horowitz, and J. E. Sorensen (Eds.), Evaluation of Human Service Programs. New York: Academic Press.

Barak, R. J. (1982). Program Review in Higher Education Within and Without. Boulder, CO: National Center for Higher Educational Management Systems.

Baugher, D. (Ed.). (1981). Measuring Effectiveness: New Directions for Program Evaluation. San Francisco, CA: Jossey-Bass.

Dressel, P. L. (1976). Handbook of Academic Evaluation. San Francisco, CA: Jossey-Bass.

Duncan, M. (1982). Program Evaluation: A Model for ACCTion Colleges. Pendleton, SC: ACCTion Consortium, Tri County Technical College.

Ebel, R. L. (1967). Measuring Educational Achievement. Englewood Cliffs, NJ: Prentice-Hall.

Evans, R., & Milander, H. (1985, Fall). A Comprehensive Approach to Program Assessment in Community Colleges. The Journal of Staff, Program, and Organization Development, pp. 85-90.

Feasley, C. E. (1980). Program Evaluation. AAHE ERIC/Higher Education Research Report No. 2. Washington, D.C.: American Association for Higher Education, George Washington University.

Feldman, M. S., & March, J. C. (1981). Information in Organizations as Signal and Symbol. Administrative Science Quarterly, 26, p. 171-186.

Friedel, J. N. (1987). Labor Market Assessments: An Essential Data Element for Program Development and Evaluation. Bettendorf, IA: Eastern Iowa Community College District, 110 pages. ERIC Document 286 033.

Friedel, J. N. (1986, September/October). Labor Market Assessments: An Essential Data Source for Program Relevancy. The ACCTion Connection. Vol. XII, No. 1.

Garrity, R., & Findlen, G. (1985, Fall). Program Review: A Model Instrument and Process. The Journal of Staff, Program and Organization Development, pp. 81-84.

Guttentag, M., & Struening, M. L. (Eds.). (1975). Handbook of Evaluation Research. Beverly Hills, CA: Sage Publications.

Henry, D. D. (1976, Winter). Accountability: To Whom, For What, By What Means? Educational Record.

Houston, W. R., et al. (1978). Assessing School/College/ Community Needs. Omaha, NE: The Center For Urban Education, The University of Nebraska at Omaha.

Isaac, S., & Michael, W. B. (1983). Handbook on Reasearch and Evaluation. San Diego, CA: EdITS Publishers, 234 pages.

Keller, G. (1983). Academic Strategy: The Management Revolution in American Higher Education. Baltimore, MD: The Johns Hopkins University.

London, J., & Ewing, J. B. (1980). Societal Factors Affecting Education. Fort Lauderdale, Florida: Nova University.

Love, A. J., (Ed.). (1983). Developing Effective Internal Evaluation. San Francisco, CA: Jossey-Bass, Inc., Publishers, 109 pages.

Magnesen, V. (1985, Fall). A 3-Tiered Program Review System -- Effective and Efficient. The Journal of Staff, Program, and Organization Development, pp. 100-102.

Miller, R. I. (1980). The Assessment of College Performance. San Francisco, CA: Jossey-Bass.

Monroe, C. R. (1977). Profile of the Community College, San Francisco, CA: Jossey-Bass Publishers.

Moriarty, D. F. (1985, Fall). Program Review: A Challenge for Leadership. The Journal of Staff, Program and Organization Development, p. 80.

Mouly, G. J. (1978). Educational Research The Art and Science of Investigation, Boston, MA: Allyn and Bacon.

Nespoli, L. (1985, Fall). Evaluating Instructional Programs: A State-Level Perspective. The Journal of Staff, Program and Organization Development, pp. 106-109.

Noll, V. H., Scannell, D. P., & Craig, R. C. (1979). Introduction to Educational Measurement, 4th ed.; Boston, MA: Houghton Mifflin.

Patton, M. Q. (1982). Practical Evaluation. Beverly Hills, CA: Sage Publications.

Patton, M. Q. (1978). Utilization-Focused Evaluation. Beverly Hills, CA: Sage Publications.

Provus, M. M. (1969). Teaching for Relevance, an In-Service Training Program. Chicago, IL: Whitehall.

Raizen, S., & Rossi, P. (1981). Program Evaluation in Education: When? How? To What End? Washington, D.C.: National Academy Press.

Stake, R. E. (1967). The Countenance of Educational Evaluation. Teachers College Record, 68, pp. 523-540.

Stufflebeam, D. L., Foley, W.J., Gephart, W. J., Gluba, E. G., Hammod, R. L., Merriman, H. O., & Provus, M. M. (1971). Educational Evaluation and Decision-Making in Education. Itasca, IL: Peacock.

Suchman, E. A. (1967). Evaluative Research: Principles and Practice, Public Service and Social Action Programs. New York: Russell, Sage Foundation.

Thorndike, R. L., & Hagen, E. (1969). Measurement and Evaluation in Psychology and Education. New York: Wiley.

Warmbrod, C., & Persavich, J. (1981). Postsecondary Program Evaluation. Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University.

Weiss, C. H. (Ed.). (1972). Evaluating Action Programs. Boston, MA: Allyn and Bacon.

Windle, C., & Neigher, W. (1978). Ethical Problems in Program Evaluation: Advice for Tract Evaluators. Evaluation in Program Planning, 1(2), 97-107.

Worthen, B. R., & Sanders, J. R. (1973). Educational Evaluation: Theory and Practice. Belmont, CA: Wadsworth Publishing Company, Inc., 372 pages.